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EXAMINER	
NGUYEN, MINH CHAU	

ART UNIT	PAPER NUMBER
2145	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/082,644	CAO ET AL.	
	Examiner	Art Unit	
	MINH-CHAU N. NGUYEN	2145	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 February 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/25/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

MN

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-3,5-16,19-21,24-32,34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Casper et al. (Casper) (US 6,505,248 B1), and Zhang et al. (Zhang) (US 2003/0018794 A1).
2. Regarding claim 1, Casper teaches a method of monitoring network performance with an end device communicating over interconnected networks, the method comprising:

   a) generating a datastream in a network with an end device (i.e. an user's node), the datastream comprising a tracer packet (i.e. a datastream is a request is for status information on one of remote servers on the network. The request is implemented as one or more packets which include a packet for the status information (this packet is same as a tracer packet)) (Col. 8, L. 15-30; and Col. 11, L. 25-65);

   b) collecting network service information from at least one intermediate node (i.e. managing server 105) within the network with the tracer packet (Col. 4, L. 1-21; and Col. 7, L. 1-28; and Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25-65);

c) returning the tracer packet over the network to the end device (Col. 4, L. 1-21; and Col. 7, L. 1-28; and Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25-Col. 12, L. 55); and

d) interpreting the network service information in the tracer packet (Col. 9, L. 42-Col. 10, L. 5; and Col. 11, L. 25-Col. 12, L. 55).

Casper fails to teach a heterogeneous network. However, Zhang, in the same field of endeavor having closely related objectivity, teaches a heterogeneous network (paragraph 6,22).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Zhang's teachings of a heterogeneous network, in the teachings of Casper in method and system for monitoring and dynamically reporting a status of a remote server, for the purpose of providing "incorporation of control parameters is associated with each of the wireline and wireless networks enables the network gateway to distinguish transmission problems within each of the individual networks of the heterogeneous communication channel, facilitating accurate resolution of the transmission problem" (Zhang, paragraph 6).

3. Regarding claim 2, Casper teaches the method of claim 1, wherein a) comprises generating the tracer packet with a format substantially similar to an application data Internet protocol (IP) packet with the addition of access network tracking

data (i.e. status information on one of remote servers on the network) (Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25-Col. 12, L. 55).

Casper fails to teach heterogeneous access network tracking (HANT) data in a heterogeneous network. However, Zhang, in the same field of endeavor having closely related objectivity, teaches heterogeneous access network tracking (HANT) data in a heterogeneous network (paragraph 6,22,31,50-51).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Zhang's teachings of heterogeneous access network tracking (HANT) data in a heterogeneous network, in the teachings of Casper in method and system for monitoring and dynamically reporting a status of a remote server, for the purpose of providing "incorporation of control parameters is associated with each of the wireline and wireless networks enables the network gateway to distinguish transmission problems within each of the individual networks of the heterogeneous communication channel, facilitating accurate resolution of the transmission problem" (Zhang, paragraph 6).

4. Regarding claim 3, Casper teaches the method of claim 2, wherein access network tracking data comprises at least one of a node-type field, a node-ID field, an attribute name field, an attribute value field, an attribute type field and a timestamp field (Col. 8, L. 15-Col. 9, L. 41).

Casper fails to teach heterogeneous access network tracking (HANT) data. However, Zhang, in the same field of endeavor having closely related objectivity, teaches heterogeneous access network tracking (HANT) data (paragraph 6,22,31,50-51).

The same motivation that was utilized in claim 2, applies equally as well to claim 3.

5. Regarding claim 5, Casper teaches the method of claim 1, wherein a) comprises generating the tracer packet as a function of at least one of an automatic probe mode, a manual probe mode and an event probe mode (Col. 8, L. 15-Col. 9, L. 41).

6. Regarding claim 6, Casper teaches the method of claim 1, wherein b) comprises:

extracting the tracer packet from the datastream (Col. 4, L. 1-21; and Col. 7, L. 1-28; and Col. 8, L. 15-30; and Col. 11, L. 25-Col. 12, L. 25);

storing network traffic conditions present at the at least one intermediate node in the tracer packet (Col. 1, L. 62-Col. 2, L. 5, L. 46-62; and Col. 4, L. 1-21; and Col. 7, L. 1-28; and Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25- Col. 12, L. 25); and

returning the tracer packet to the datastream (Col. 4, L. 1-21; and Col. 7, L. 1-28; and Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25-Col. 12, L. 55).

7. Regarding claim 7, Casper teaches the method of claim 1, wherein b) comprises identifying the network service information associated with the at least one intermediate node (Col. 4, L. 1-21; and Col. 7, L. 1-28; and Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25-65).

8. Regarding claim 8, Casper teaches the method of claim 1, wherein the datastream comprises a plurality of packets and b) comprises routing the tracer packet as one of the packets (Col. 11, L. 25-Col. 12, L. 55).

9. Regarding claim 9, Casper teaches the method of claim 1, wherein b) comprises selectively configuring the at least one intermediate node to recognize the tracer packet, wherein the tracer packet is unrecognizable by intermediate nodes that remain unconfigured (Col. 8, L. 15-Col. 9, L. 41).

10. Regarding claim 10, Casper teaches the method of claim 1, wherein c) comprises:

extracting the tracer packet from the datastream (Col. 4, L. 1-21; and Col. 7, L. 1-28; and Col. 8, L. 15-30; and Col. 11, L. 25-Col. 12, L. 25);

writing network condition information into the tracer packet (Col. 4, L. 1-21; and Col. 7, L. 1-28; and Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25- Col. 12, L. 25); and

re-routing the tracer packet to return to the end device (Col. 4, L. 1-21; and Col. 7, L. 1-28; and Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25-Col. 12, L. 55).

11. Regarding claim 11, Casper teaches the method of claim 1, wherein d) comprises: presenting results on the end device (Col. 9, L. 30-Col. 10, L. 5; and Col. 12, L. 25-55).

Casper fails to teach deciphering the network service information. However, Zhang, in the same field of endeavor having closely related objectivity, teaches deciphering the network service information (paragraph 109,124-125).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Zhang's teachings of deciphering the network service information, in the teachings of Casper in method and system for monitoring and dynamically reporting a status of a remote server, for the purpose of providing incorporation of control parameters is associated with each of the wireline and wireless networks enables the network gateway to transmit data packets within each of the individual networks of the heterogeneous communication channel.

12. Regarding claim 12, Casper teaches a method of monitoring network performance with an end device communicating over interconnected networks, the method comprising:

a) filtering a datastream passing from a first device (i.e. the user's node) to a second device (i.e. the managing server) to identify a tracer packet (Col. 4, L. 1-21; and Col. 7, L. 1-28; and Col. 8, L. 15-30; and Col. 11, L. 25-65);

b) probing a destination device operating in the second device for probing information as a function of the tracer packet (Col. 4, L. 1-21; and Col. 7, L. 1-28; and Col. 8, L. 15-30; and Col. 11, L. 25-Col. 12, L. 25);

c) storing the probing information as network condition information in the tracer packet (Col. 1, L. 62-Col. 2, L. 5, L. 46-62; and Col. 4, L. 1-21; and Col. 7, L. 1-28; and Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25- Col. 12, L. 25); and

d) routing the tracer packet to an end device (Col. 4, L. 1-21; and Col. 7, L. 1-28; and Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25-Col. 12, L. 55).

Casper fails to teach a first and a second heterogeneous network. However, Zhang, in the same field of endeavor having closely related objectivity, teaches a first and a second heterogeneous network (i.e. wireless and wireline networks) (paragraph 6,22).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Zhang's teachings of a first and a second heterogeneous network, in the teachings of Casper in method and system for monitoring and dynamically reporting a status of a remote server, for the purpose of providing "incorporation of control parameters is associated with each of the wireline and wireless networks enables the network gateway to distinguish transmission problems within each of the individual networks of the

heterogeneous communication channel, facilitating accurate resolution of the transmission problem" (Zhang, paragraph 6).

13. Regarding claim 13, Casper teaches the method of claim 12, wherein a) comprises:

extracting the tracer packet from the datastream (Col. 4, L. 1-21; and Col. 7, L. 1-28; and Col. 8, L. 15-30; and Col. 11, L. 25-Col. 12, L. 25); and

leaving the remainder of the datastream intact (Col. 4, L. 1-21; and Col. 7, L. 1-28; and Col. 8, L. 15-30; and Col. 11, L. 25-Col. 12, L. 55).

14. Regarding claim 14, Casper teaches the method of claim 12, wherein b) comprises detecting at least one of the function of the destination device, the type of destination device, the communication latency to the destination device and congestion around the destination device (Col. 1, L. 62-Col. 2, L. 5, L. 46-62; and Col. 4, L. 1-21; and Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25-Col. 12, L. 55).

15. Regarding claim 15, Casper teaches the method of claim 12, wherein b) comprises storing the probing information for use in another tracer packet (Col. 4, L. 1-21; and Col. 7, L. 1-28; and Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25-Col. 12, L. 55).

16. Regarding claim 16, Casper teaches the method of claim 12, wherein c) comprises storing network service information in the tracer packet as part of the network condition information (Col. 1, L. 62-Col. 2, L. 5, L. 46-62; and Col. 4, L. 1-21; and Col. 7, L. 1-28; and Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25- Col. 12, L. 25).

17. Regarding claim 19, Casper teaches the method of claim 12, wherein d) comprises exchanging a source address and a destination address in the tracer packet (i.e. in performance request, the address of the user's node is a source address and the managing server's address is a destination address. However, in performance response, the managing server's address is a source address, and the address of the user's node is a destination address) (Col. 4, L. 1-21; and Col. 7, L. 1-28; and Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25- Col. 12, L. 25).

18. Regarding claim 20, Casper teaches the method of claim 12, wherein the device and the second device are interconnected and communicate over the Internet (figure 1; and Col. 1, L. 54-60; and Col. 5, L. 18-67).

Casper fails to teach the first heterogeneous network and the second heterogeneous network are interconnected and communicate over the core Internet. However, Zhang, in the same field of endeavor having closely related objectivity, teaches the first heterogeneous network and the second

heterogeneous network are interconnected and communicate over the core Internet (i.e. wireless and wireline networks) (paragraph 6,22-23).

The same motivation that was utilized in claim 12, applies equally as well to claim 20.

19. Regarding claim 21, Casper teaches a method of monitoring network performance, with an end device communicating over interconnected networks, the method comprising:

a) generating a datastream with an end device (i.e. the user's node), the datastream comprising a plurality of data packets and a tracer packet each comprising a destination address of an application server (i.e. remote server) (i.e. a datastream is a request is for status information on one of remote servers on the network. The request is implemented as one or more IP packets which include a packet for the status information (this packet is same as a tracer packet). Moreover, IP packet header contains the destination address) (Col. 8, L. 15-30; and Col. 11, L. 25-65);

b) routing the datastream over a network through an intermediate node (i.e. managing server) (Col. 4, L. 1-21; and Col. 7, L. 1-28; and Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25-55);

c) selectively storing network service information in the tracer packet at the intermediate node (Col. 1, L. 62-Col. 2, L. 5, L. 46-62; and Col. 4, L. 1-21;

and Col. 7, L. 1-28; and Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25- Col. 12, L. 25);

d) removing the tracer packet from the datastream at a gateway (i.e. conventional gateway or the managing server) (Col. 4, L. 1-21; and Col. 7, L. 1-Col. 9, L. 41; and Col. 11, L. 25- Col. 12, L. 55);

e) gathering network condition information at the gateway as a function of the destination address of the tracer packet (Col. 4, L. 1-21; and Col. 7, L. 1-Col. 9, L. 41; and Col. 11, L. 25- Col. 12, L. 55);

f) storing the network condition information in the tracer packet (Col. 1, L. 62-Col. 2, L. 5, L. 46-62; and Col. 4, L. 1-21; Col. 11, L. 25- Col. 12, L. 55); and

g) routing the tracer packet back over the network through the intermediate node to the end device (Col. 4, L. 1-21; and Col. 7, L. 1-28; and Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25-Col. 12, L. 55).

Casper fails to teach a heterogeneous network. However, Zhang, in the same field of endeavor having closely related objectivity, teaches a heterogeneous network (paragraph 6,22).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Zhang's teachings of a heterogeneous network, in the teachings of Casper in method and system for monitoring and dynamically reporting a status of a remote server, for the purpose of providing "incorporation of control parameters is associated with each of the wireline and wireless networks enables the network gateway to distinguish

transmission problems within each of the individual networks of the heterogeneous communication channel, facilitating accurate resolution of the transmission problem" (Zhang, paragraph 6).

20. Regarding claim 24, Casper teaches the method of claim 21, wherein a) comprises tracking the time interval of a type of system activity information desired on the selected remote server (Col. 7, L. 38-67; and Col. 9, L. 1-15).

Casper fails to teach tracking the time of departure of the tracer packet from the end device, wherein loss of the tracer packet is determined as a function of the time of departure. However, Zhang, in the same field of endeavor having closely related objectivity, teaches tracking the time of departure of the tracer packet from the end device, wherein loss of the tracer packet is determined as a function of the time of departure (paragraph 52).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Zhang's teachings of tracking the time of departure of the tracer packet from the end device, wherein loss of the tracer packet is determined as a function of the time of departure, in the teachings of Casper in method and system for monitoring and dynamically reporting a status of a remote server, for the purpose of providing "incorporation of control parameters is associated with each of the wireline and wireless networks enables the network gateway to distinguish transmission problems within each of the individual networks of the heterogeneous communication

channel, facilitating accurate resolution of the transmission problem" (Zhang, paragraph 6).

21. Regarding claim 25, Casper teaches the method of claim 21, wherein c) comprises writing network traffic conditions around the intermediate node into the tracer packet (Col. 1, L. 62-Col. 2, L. 5, L. 46-62; and Col. 4, L. 1-21; and Col. 7, L. 1-28; and Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25- Col. 12, L. 25).

22. Regarding claim 26, Casper teaches the method of claim 21, wherein e) comprises at least one of:

determining the function and type of the application server (Col. 9, L. 1-41; and Col. 11, L. 25-Col. 12, L. 55);

Casper fails to teach detecting communication latency between the gateway and the application server; and detecting congestion at the application server. However, Zhang, in the same field of endeavor having closely related objectivity, teaches detecting communication latency between the gateway and the application server (paragraph 108-109); and detecting congestion at the application server (paragraph 23).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Zhang's teachings of detecting communication latency between the gateway and the application server; and detecting congestion at the application server, in the teachings of Casper in

method and system for monitoring and dynamically reporting a status of a remote server, for the purpose of providing "incorporation of control parameters is associated with each of the wireline and wireless networks enables the network gateway to distinguish transmission problems within each of the individual networks of the heterogeneous communication channel, facilitating accurate resolution of the transmission problem" (Zhang, paragraph 6).

23. Regarding claim 27, Casper teaches the method of claim 21, wherein f) comprises:

storing the network condition information in the gateway (Col. 1, L. 62-Col. 2, L. 5, L. 46-62; and Col. 4, L. 1-21; and Col. 7, L. 1-37; and Col. 11, L. 25- Col. 12, L. 55); and

reusing the network condition information for future tracer packets directed to the same application server (i.e. a history of system activity information related to the operation of a remote server (i.e. the network condition information) is kept in a database 130 for future tracer packets (or requests)) (Col. 7, L. 1-Col. 8, L. 30).

24. Regarding claim 28, Casper teaches a network monitoring system for monitoring network performance with an end device communicating over networks, the network monitoring system comprising:

a network comprising a first device (i.e. the user's node) communicatively coupled with a second device (i.e. the managing server) (figure 1, Col. 5, L. 18-67);

an end device (i.e. the user's node) operable in the network (figure 1, Col. 5, L. 18-67);

an application server (i.e. the remote server) operable in the network, the end device and the application server operable to communicate over the network with a datastream(i.e. the user's request), the end device operable to generate a tracer packet as part of the datastream (i.e. a datastream is a request is for status information on one of remote servers on the network. The request is implemented as one or more packets which include a packet for the status information (this packet is same as a tracer packet)) (Col. 8, L. 15-30; and Col. 11, L. 25-65); and

a gateway (i.e. a conventional gateway or the managing server) operable in the network as an interface to the second device, the gateway operable to store network condition information in the tracer packet and redirect the tracer packet back to the end device over the network (Col. 4, L. 1-21; and Col. 7, L. 1-37; and Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25- Col. 12, L. 25).

Casper fails to teach a network comprising a first heterogeneous network communicatively coupled with a second heterogeneous network; an end device operable in the first heterogeneous network; an application server operable in the second heterogeneous network; and a gateway operable in the first

heterogeneous network. However, Zhang, in the same field of endeavor having closely related objectivity, teaches a network comprising a first heterogeneous network communicatively coupled with a second heterogeneous network; an end device operable in the first heterogeneous network; an application server operable in the second heterogeneous network; and a gateway operable in the first heterogeneous network (i.e. a first heterogeneous network is wireless network, second heterogeneous network is wireline network; an end device operable in the first heterogeneous network is wireless host; an application server operable in the second heterogeneous network is wireline host (or content server); and a gateway 110) (figure 1; and paragraph 6,22-23).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Zhang's teachings of a network comprising a first heterogeneous network communicatively coupled with a second heterogeneous network; an end device operable in the first heterogeneous network; an application server operable in the second heterogeneous network; and a gateway operable in the first heterogeneous network, in the teachings of Casper in method and system for monitoring and dynamically reporting a status of a remote server, for the purpose of providing "incorporation of control parameters is associated with each of the wireline and wireless networks enables the network gateway to distinguish transmission problems within each of the individual networks of the heterogeneous

communication channel, facilitating accurate resolution of the transmission problem" (Zhang, paragraph 6).

25. Regarding claim 29, Casper teaches the network monitoring system of claim 28, further comprising an intermediate node operable in the network, the datastream operable to travel through the intermediate node, the intermediate node operable to store network service information in the tracer packet (Col. 4, L. 1-21; and Col. 7, L. 1-28; and Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25-Col. 12, L. 55).

Casper fails to teach the intermediate node operable in the first heterogeneous network. However, Zhang, in the same field of endeavor having closely related objectivity, teaches the intermediate node operable in the first heterogeneous network (i.e. the network gateway 110 is an intermediate node in the wireless network) (paragraph 23).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Zhang's teachings of the intermediate node operable in the first heterogeneous network, in the teachings of Casper in method and system for monitoring and dynamically reporting a status of a remote server, for the purpose of providing "incorporation of control parameters is associated with each of the wireline and wireless networks enables the network gateway to distinguish transmission problems within each of the individual networks of the heterogeneous communication channel, facilitating accurate resolution of the transmission problem" (Zhang, paragraph 6).

26. Regarding claim 30, Casper teaches the network monitoring system of claim 28, wherein the end device comprises one of a wireless phone, a personal digital assistant (PDA) and a laptop computer (i.e. a laptop computer is a computer workstation) (Col. 6, L. 5-7).

27. Regarding claim 31, Casper teaches the network monitoring system of claim 28 comprises a distributed computing network (Col. 5, L. 18-67).

Casper fails to teach the first heterogeneous network comprises a wireless network and the second heterogeneous network comprises a wireline network. However, Zhang, in the same field of endeavor having closely related objectivity, teaches the first heterogeneous network comprises a wireless network and the second heterogeneous network comprises a wireline network (figure 1; and paragraph 6,22-23).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Zhang's teachings of the first heterogeneous network comprises a wireless network and the second heterogeneous network comprises a wireline network, in the teachings of Casper in method and system for monitoring and dynamically reporting a status of a remote server, for the purpose of providing "incorporation of control parameters is associated with each of the wireline and wireless networks enables the network gateway to distinguish transmission problems within each of the

individual networks of the heterogeneous communication channel, facilitating accurate resolution of the transmission problem" (Zhang, paragraph 6).

28. Regarding claim 32, Casper teaches the network monitoring system of claim 28, wherein the first device is communicatively coupled with the managing server within the network (Col. 5, L. 18-67).

Casper fails to teach the first heterogeneous network is communicatively coupled with the second heterogeneous network via the core Internet. However, Zhang, in the same field of endeavor having closely related objectivity, teaches the first heterogeneous network is communicatively coupled with the second heterogeneous network via the core Internet (figure 1; and paragraph 6,22-23).

The same motivation that was utilized in claim 28, applies equally as well to claim 32.

29. Regarding claim 35, Casper teaches the network monitoring system of claim 28, wherein the end device comprises: a user interface component, an end device packet interception component, a traffic monitoring component, a packet sending component, a packet generator component, a probing trigger component and an event generator component (Col. 6, L. 1-26; and Col. 7, L. 1-49; and Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25-Col. 12, L. 55).

Casper fails to teach a packet decipher component, a tracer timer component. However, Zhang, in the same field of endeavor having closely

related objectivity, teaches a packet decipher component, a tracer timer component (paragraph 108-109,124-125).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Zhang's teachings of a packet decipher component, a tracer timer component, in the teachings of Casper in method and system for monitoring and dynamically reporting a status of a remote server, for the purpose of providing "incorporation of control parameters is associated with each of the wireline and wireless networks enables the network gateway to distinguish transmission problems within each of the individual networks of the heterogeneous communication channel, facilitating accurate resolution of the transmission problem" (Zhang, paragraph 6).

30. Regarding claim 36, Casper teaches the network monitoring system of claim 29, wherein the intermediate node comprises: a packet interception component, a packet manipulation component and a status component, the status component operable to store and maintain statistical information related to the intermediate node (Col. 7, L. 1-Col. 8, L. 30; and Col. 11, L. 25-Col. 12, L. 55).

31. Regarding claim 37, Casper teaches the network monitoring system of claim 28, wherein the gateway comprises: an administration interface component, a gateway packet interception component, a gateway packet monitoring component, a probing component, a gateway status component and a gateway

packet manipulation component (i.e. the gateway can be a conventional gateway or the managing server as long as information and requests can be sent form one element to another regardless of the physical implementation of the network or the diversity of network elements between two elements) (Col. 7, L. 1-Col. 8, L. 30; and Col. 11, L. 25-Col. 12, L. 55).

32. Claim 34 is corresponding system claim of method claim 3. Therefore, it is rejected under the same rationale.

33. Claims 4,17-18,22-23,33,38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Casper and Zhang as applied to claims 1,12,21 above, and further in view of Campbell et al. (Campbell) (5,983,259).

34. Regarding claim 4, Casper and Zhang are relied upon for the disclosure set forth in the previous rejection. Casper teaches generating the tracer packet and an access network tracking (Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25-Col. 12, L. 55), with Zhang teaches a heterogeneous network protocol (paragraph 6,22,31,50-51).

Casper and Zhang fail to teach generating the tracer packet comprises filling a protocol field of the tracer packet. However, Campbell, in the same field of endeavor having closely related objectivity, teaches generating the tracer packet comprises filling a protocol field of the tracer packet (i.e. protocol specific

information is filled in each data segments. Therefore, the data segment includes a protocol field) (Col. 8, L. 10-22; and Col. 9, L. 40-58).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Campbell's teachings of generating the tracer packet comprises filling a protocol field of the tracer packet, with Zhang's teaching of architecture and related methods for streaming media content through heterogeneous networks, in the teachings of Casper in method and system for monitoring and dynamically reporting a status of a remote server, for the purpose of providing "incorporation of control parameters is associated with each of the wireline and wireless networks enables the network gateway to distinguish transmission problems within each of the individual networks of the heterogeneous communication channel, facilitating accurate resolution of the transmission problem" (Zhang, paragraph 6).

35. Regarding claim 17, Casper and Zhang are relied upon for the disclosure set forth in the previous rejection. Casper teaches the IP packets and the tracer packet (Col. 11, L. 25-Col. 12, L. 55).

Casper and Zhang fail to teach adding a segment to the tracer packet; and adjusting the value of a total length field in the tracer packet as a function of the added segment. However, Campbell, in the same field of endeavor having closely related objectivity, teaches adding a segment to the tracer packet; and

adjusting the value of a total length field in the tracer packet as a function of the added segment (Col. 7, L. 7-26; and Col. 9, L. 40-58).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Campbell's teachings of adding a segment to the tracer packet; and adjusting the value of a total length field in the tracer packet as a function of the added segment, with Zhang's teaching of architecture and related methods for streaming media content through heterogeneous networks, in the teachings of Casper in method and system for monitoring and dynamically reporting a status of a remote server, for the purpose of providing "incorporation of control parameters is associated with each of the wireline and wireless networks enables the network gateway to distinguish transmission problems within each of the individual networks of the heterogeneous communication channel, facilitating accurate resolution of the transmission problem" (Zhang, paragraph 6).

36. Regarding claim 18, Casper and Zhang are relied upon for the disclosure set forth in the previous rejection. Casper teaches the IP packets and the tracer packet (Col. 11, L. 25-Col. 12, L. 55).

Casper and Zhang fail to teach modifying the length of a variable length data segment in the tracer packet; and adjusting the value of a total length field in the tracer packet as a function of the modified length. However, Campbell, in the same field of endeavor having closely related objectivity, teaches modifying the

length of a variable length data segment in the tracer packet; and adjusting the value of a total length field in the tracer packet as a function of the modified length (Col. 7, L. 7-26; and Col. 8, L. 23-45; and Col. 9, L. 40-58).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Campbell's teachings of modifying the length of a variable length data segment in the tracer packet; and adjusting the value of a total length field in the tracer packet as a function of the modified length, with Zhang's teaching of architecture and related methods for streaming media content through heterogeneous networks, in the teachings of Casper in method and system for monitoring and dynamically reporting a status of a remote server, for the purpose of providing "incorporation of control parameters is associated with each of the wireline and wireless networks enables the network gateway to distinguish transmission problems within each of the individual networks of the heterogeneous communication channel, facilitating accurate resolution of the transmission problem" (Zhang, paragraph 6).

37. Regarding claim 22, Casper and Zhang are relied upon for the disclosure set forth in the previous rejection. Casper teaches generating the tracer packet (Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25-Col. 12, L. 55).

Casper and Zhang fail to teach generating the tracer packet with protocol identification different from the other data packets. However, Campbell, in the same field of endeavor having closely related objectivity, teaches generating the

tracer packet with protocol identification different from the other data packets (i.e. protocol specific information is a protocol identification) (Col. 8, L. 10-22; and Col. 9, L. 40-58).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Campbell's teachings of generating the tracer packet with protocol identification different from the other data packets, with Zhang's teaching of architecture and related methods for streaming media content through heterogeneous networks, in the teachings of Casper in method and system for monitoring and dynamically reporting a status of a remote server, for the purpose of providing "incorporation of control parameters is associated with each of the wireline and wireless networks enables the network gateway to distinguish transmission problems within each of the individual networks of the heterogeneous communication channel, facilitating accurate resolution of the transmission problem" (Zhang, paragraph 6).

38. Regarding claim 23, Casper and Zhang are relied upon for the disclosure set forth in the previous rejection. Casper teaches generating the tracer packet (Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25-Col. 12, L. 55).

Casper and Zhang fail to teach identifying the tracer packet in the datastream as a function of the protocol identification. However, Campbell, in the same field of endeavor having closely related objectivity, teaches identifying the tracer packet in the datastream as a function of the protocol identification (i.e.

protocol specific information is a protocol identification) (Col. 8, L. 10-22; and Col. 9, L. 40-58; and Col. 14, L. 26-48).

The same motivation that was utilized in claim 22, applies equally as well to claim 23.

39. Regarding claim 33, Casper and Zhang are relied upon for the disclosure set forth in the previous rejection. Casper teaches the tracer packet comprises a source address, a destination address, and access network tracking data (Col. 11, L. 25-Col. 12, L. 55), and Zhang teaches the heterogeneous network (paragraph 6,22).

Casper and Zhang fail to teach a protocol field, the size of the tracking data adjustable to accommodate variable amounts of data provided by the gateway. However, Campbell, in the same field of endeavor having closely related objectivity, teaches a protocol field, the size of the tracking data adjustable to accommodate variable amounts of data provided by the gateway (Col. 7, L. 7-26; and Col. 8, L. 23-45; and Col. 9, L. 40-58).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Campbell's teachings of a protocol field, the size of the tracking data adjustable to accommodate variable amounts of data provided by the gateway, with Zhang's teaching of architecture and related methods for streaming media content through heterogeneous networks, in the teachings of Casper in method and system for monitoring and

dynamically reporting a status of a remote server, for the purpose of providing "incorporation of control parameters is associated with each of the wireline and wireless networks enables the network gateway to distinguish transmission problems within each of the individual networks of the heterogeneous communication channel, facilitating accurate resolution of the transmission problem" (Zhang, paragraph 6).

40. Regarding claim 38, Casper and Zhang are relied upon for the disclosure set forth in the previous rejection. Casper teaches the end device comprises an end device network monitoring module (Col. 1, L. 54-61; and Col. 6, L. 1-26; and Col. 7, L. 1-49; and Col. 8, L. 15-Col. 9, L. 41; and Col. 11, L. 25-Col. 12, L. 55).

Casper and Zhang fail to teach the end device network monitoring module operable in a network stack between a transport layer and a network layer. However, Campbell, in the same field of endeavor having closely related objectivity, teaches the end device network monitoring module operable in a network stack between a transport layer and a network layer (Col. 2, L. 29-Col. 3, L. 3).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Campbell's teachings the end device network monitoring module operable in a network stack between a transport layer and a network layer, with Zhang's teaching of architecture and related methods for streaming media content through heterogeneous networks,

in the teachings of Casper in method and system for monitoring and dynamically reporting a status of a remote server, for the purpose of providing "incorporation of control parameters is associated with each of the wireline and wireless networks enables the network gateway to distinguish transmission problems within each of the individual networks of the heterogeneous communication channel, facilitating accurate resolution of the transmission problem" (Zhang, paragraph 6).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MINH-CHAU N. NGUYEN whose telephone number is (571)272-4242. The examiner can normally be reached on Monday-Friday from 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JASON D. CARDONE can be reached on (571) 272-6159. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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